



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

SUGIMOTO et al.

Appln. No. 10/507,016

Filed: July 18, 2005

FOR: CURABLE LIQUID RESIN COMPOSITION

Confirmation No. 6554

Atty. Ref.: 4676-25

T.C. / Art Unit: 1794

Examiner: Elizabeth M. COLE

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BRIEF FOR EX PARTE APPEAL

May 13, 2009

Mail Stop Appeal Brief – Patents

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Appellants submit this Brief under 37 CFR § 41.37 to appeal the Examiner's final rejections of claims 12-25 as set forth in her Office Action mailed December 15, 2009.

The fee required under 37 CFR § 41.20(b)(2) is attached.

The Notice of Appeal was filed on March 13, 2009 Therefore, this Brief is due on May 13, 2009.

Reversal of the Examiner's claim rejections by the Board of Patent Appeals and Interferences (the "Board") is respectfully requested.

I. REAL PARTIES IN INTEREST

The assignees, DSM IP ASSETS B.V. and JSR Corporation, hold all rights in the subject invention by the assignment recorded in the Patent and Trademark Office on September 22, 2005 starting at reel 017012 and frame 0705.

II. RELATED APPEALS AND INTERFERENCES

Appellants, the assignee, and its legal representative do not know of any prior or pending appeal, interference, or judicial proceeding which is related to, directly affects or is directly affected by, or has a bearing on the Board's decision in this appeal.

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III. STATUS OF CLAIMS

Claims 1-10 are canceled. Claim 11 is withdrawn. Claims 12-25 are pending. Claims 12-25 stand rejected and are at issue in this appeal; they are set forth in the Claims Appendix.

IV. STATUS OF AMENDMENTS

No amendment was filed subsequent to final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 12 involved in this appeal is directed to a coated optical fiber comprising a cured primary coating with a modulus of less than 3 MPa at 23°C and a cured secondary coating based on a curable liquid resin composition comprising

- (a) 5-94 parts by weight of a urethane (meth)acrylate comprising a polyether backbone, at least one urethane group and at least one (meth)acrylate end group;
- (b) 5-94 parts by weight of a polymerizable monomer, and;
- (c) 0.01-10 parts by weight of a photoinitiator, in 100 parts by weight of the curable liquid resin composition, wherein the cured product of the curable liquid resin composition has a glass transition temperature between 30°C to 85°C and a stress relaxation time of 30 minutes or less.

The subject matter of claim 12 is supported by the originally filed disclosure (see, e.g., the originally filed claims 1 and 12 and the Specification at page 2 line 18 to 34.

Therefore, the invention as presently claimed is clearly supported by Appellants' disclosure as originally filed.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- A. Under 35 U.S.C. 103(a), was it proper to reject claims 12-25 allegedly unpatentable over Uchida et al. (WO 01/47824 A1) and Bicerano (Predication of Polymer Properties) and Furukawa (Physical Chemistry of Polymer Rheology)?

- B. Applicants respectfully state that this rejection was not proper and offer the following arguments in support of their statement.

VII. ARGUMENTS

The pending claims should be considered in one group. The group includes claims 12-25.

35 U.S.C. 103 – Appellants Reasons why Claims 12-25 should be considered Nonobviousness

Under U.S. Patent Law, 35 U.S.C. §103, to establish a case of prima facie obviousness, all of the claim limitations must be taught or suggested by the prior art. See M.P.E.P. § 2143.03. A claimed invention is unpatentable if the differences between it and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art. *In re Kahn*, 78 USPQ2d 1329, 1334 (Fed. Cir. 2006) citing the legal standard provided in *Graham v. John Deere*, 148 USPQ 459 (1966). The *Graham* analysis needs to be made explicitly. *KSR v. Teleflex*, 82 USPQ2d 1385, 1396 (2007). It requires findings of fact and a rational basis for combining the prior art disclosures to produce the claimed invention. See *id.* (“Often, it will be necessary for a court to look to interrelated teachings of multiple patents . . . and the back-ground knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue”). The use of hindsight reasoning is impermissible. See *id.* at 1397 (“A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning”). Thus, a rejection under Section 103(a) requires “some rationale, articulation, or reasoned basis to explain why the conclusion of [prima facie] obviousness is correct.” *Kahn*, 78 USPQ2d at 1335; see *KSR*, 82 USPQ2d at 1396.

- A. Claims 12-25 were rejected under Section 103(a) as allegedly being unpatentable over Uchida et al. (WO 01/47824 A1) and Bicerano (Predication of

Polymer Properties) and Furukawa (Physical Chemistry of Polymer Rheology). Appellants traverse this rejection and request that it be withdrawn and that a Notice of Allowance be sent for all pending claims.

The claimed invention, as embodied in pending claims 12-25, is directed to optical fibers with a primary coating having a modulus of less than 3 MPa at 23°C and a secondary coating made from a curable resin composition with a glass transition temperature between 30°C and 85°C and a stress relaxation time of 30 minutes or less.

The teachings of Uchida do not render claims 12-25 obvious. Uchida refers to liquid curable resin compositions for coating optical fibers. Uchida's compositions comprise urethane (meth)acrylate compounds, (meth)acrylate compounds, and a polymer initiator. Significantly, Uchida is silent regarding the glass transition temperature and relaxation time of the secondary coating. In addition, Uchida is also silent with respect to "an optical fiber with a primary coating with a modulus of less than 3 MPa." See, pending claim 12. Since Uchida is silent as to the composition of the primary coating we do not know Uchida's primary coating composition and it cannot be argued that Uchida inherently discloses a primary coating having a modulus of less than 3 MPa at 23°C. For these reasons, the claimed invention is not obvious in view of Uchida.

The addition of the separate teachings of Furukawa and Bicerano to the teachings of Uchida does not make the claimed invention obvious. Furukawa and Bicerano are general textbook references relating to the field of polymers and their properties. Neither Furukawa or Bicerano teach the fabrication of optical fibers. The combination of the separate teachings of Uchida, Furukawa and Bicerano does not and cannot teach or suggest all the limitations of the claimed invention as recited in claim 12. That is, Furukawa and Bicerano, like Uchida, are also silent, and thus unhelpful, with respect to teaching about the glass transition temperature and relaxation time of the secondary coating, and the modulus of the primary coating.

For the reasons stated above, this rejection should be reversed because the Examiner failed to show individually all limitations of Appellants' claimed invention were obvious in view of each of Uchida, Furukawa, and Bicerano separately. In addition the

Examiner has failed to illustrate that collectively the teachings of Uchida, Furukawa and Bicerano can render the instant claimed invention obvious.

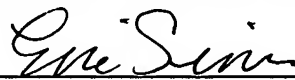
In view of Applicants statements above, Appellants urge the Board to reverse the obviousness rejection because the invention as claimed would not have been obvious to a person of ordinary skill in the art at the time it was made.

Conclusion

For the reasons discussed above, the Examiner's rejections are improper and they should be reversed by the Board. Appellants submit that the pending claims are in condition for allowance and earnestly solicit an early Notice to that effect.

Respectfully submitted,

NIXON & VANDERHYE P.C.

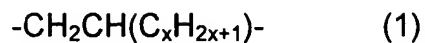
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VIII. CLAIMS APPENDIX

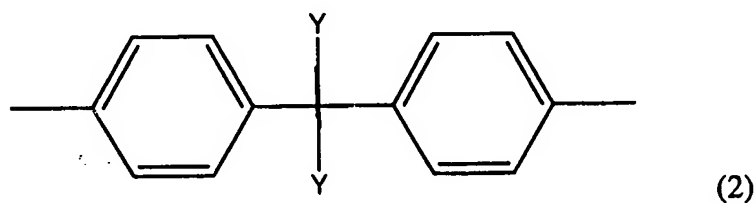
12. A coated optical fiber comprising a cured primary coating with a modulus of less than 3 MPa at 23°C and a cured secondary coating based on a curable liquid resin composition comprising:
- (a) 5-94 parts by weight of a urethane (meth)acrylate comprising a polyether backbone, at least one urethane group and at least one (meth)acrylate end group;
 - (b) 5-94 parts by weight of a polymerizable monomer, and;
 - (c) 0.01-10 parts by weight of a photoinitiator, in 100 parts by weight of the curable liquid resin composition,
- wherein the cured product of the curable liquid resin composition has a glass transition temperature between 30°C to 85°C and a stress relaxation time of 30 minutes or less.
13. The coated optical fiber of claim 12, wherein said cured product of the curable liquid resin composition has a glass transition temperature higher than 50°C.
14. The coated optical fiber of claim 12, wherein said cured product of the curable liquid resin composition has a glass transition temperature less than 75°C.
15. The coated optical fiber of claim 12, wherein said cured product of the curable liquid resin composition has a stress relaxation time of 20 minutes or less.
16. The coated optical fiber of claim 12, wherein said cured product of the curable liquid resin composition has a stress relaxation time of 10 minutes or less.

17. The coated optical fiber of claim 12, wherein said cured product of the curable liquid resin composition has a Young's modulus of between 400 and 500 MPa.
18. The coated optical fiber of claim 12, wherein said cured product of the curable liquid resin composition has a Young's modulus of between 500 and 1200 MPa.
19. The coated optical fiber of claim 12, wherein said cured product of the curable liquid resin composition has a Young's modulus of between 600 and 1000 MPa.
20. The coated optical fiber of claim 12, wherein said urethane (meth)acrylate is based on at least:
 - a polyether based polyol;
 - a diisocyanate, and;
 - a hydroxyl group-containing (meth) acrylate.
21. The coated optical fiber of claim 12, wherein said polyether backbone is derived from a polyether based polyol having a number average molecular weight of 300-10000,
wherein said polyether based polyol comprising repeating alkyl units containing 2 to 6 carbon atoms,
wherein at least part of these alkyl units contain an alkyl side chain of 1 to 5 carbon atoms.
22. The coated optical fiber of claim 12, wherein said polyether backbone is derived from a polyether based polyol comprising a structural unit shown by the following formula (1)



wherein x is an integer of between 1 and 5.

23. The coated optical fiber of claim 22, wherein x in said formula (1) is 1 or 2.
24. The coated optical fiber of claim 20, wherein said polyether based polyol is a polyether diol, and wherein said polyether diol contains a structure shown by the following formula (2)



wherein Y represents a hydrogen atom or a methyl group.

25. The coated optical fiber of claim 20, wherein said polyether based polyol is a polyether diol, and wherein said polyether diol contains an alicyclic structure.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.